

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventors: Philip D. Floyd, *et al.*

Application No.: Not yet assigned

Group:

Filed: Concurrently herewith

Examiner:

Title: METHOD AND APPARATUS FOR AN INTEGRATED LASER BEAM SCANNER

Commissioner for Patents

Washington, D.C. 20231

Sir:

**PRELIMINARY AMENDMENT UNDER 37 C.F.R. § 1.173(b)**  
**ACCOMPANYING REQUEST FOR REISSUE OF U.S. PATENT NO. 6,002,507**

Please enter this Preliminary Amendment into the file of the accompanying U.S. Patent Reissue Application.

**IN THE CLAIMS:**

Please add new claims 21-36 as follows:

21. (NEW) A MEMS formation method including:

providing a SOI wafer including a single crystal silicon layer attached to an insulator layer;

forming at least one first MEMS component by patterning the single crystal silicon layer;

and

depositing at least one layer of polysilicon on the patterned single crystal silicon.

22. (NEW) The method of claim 21 further comprising forming at least one second MEMS component by patterning the polysilicon.

23. (NEW) The method of claim 22 wherein the at least one second MEMS component is a hinge.

24. (NEW) The method of claim 23 wherein the at least one MEMS component is a mirror retained by the hinge.

25. (NEW) The method of claim 21 wherein depositing at least one layer of polysilicon includes chemical vapor deposition.

26. (NEW) The method of claim 25 wherein depositing at least one layer of polysilicon includes low pressure chemical vapor deposition.

27. (NEW) The method of claim 21 wherein forming at least one first MEMS component includes forming a deflecting mirror.

28. (NEW) The method of claim 27 further comprising forming at least one second MEMS component by patterning the polysilicon, the at least one second MEMS component including a hinge retaining the deflecting mirror.

29. (NEW) The method of claim 28 wherein forming at least one first MEMS component further includes forming a torsional mirror, and the method further comprises forming a recess in the SOI wafer and mounting a light emitter in the recess so that it will emit light at the deflecting mirror, which deflects light to the torsional mirror.

30. (NEW) A MEMS device comprising:

at least one single crystal silicon component bonded to an insulator that rests on a handle wafer; and

at least one polysilicon component derived from a layer of polysilicon applied over the at least one single crystalline silicon component.

31. (NEW) The MEMS device of claim 30 wherein the at least one single crystal silicon component comprises a deflecting mirror.

32. (NEW) The MEMS device of claim 31 wherein the at least one polysilicon component comprises a hinge retaining the deflecting mirror.

33. (NEW) The MEMS device of claim 30 wherein the at least one single crystal silicon component comprises a torsional mirror.

34. (NEW) The MEMS device of claim 30 wherein the at least one polysilicon component comprises a hinge.

35. (NEW) The MEMS device of claim 30 further comprising:

a recess in the handle wafer aligned with the at least one single crystal silicon component;  
and

a semiconductor light emitter mounted in the recess and oriented to emit a light beam at the single crystal silicon component.

36. (NEW) The MEMS device of claim 35 wherein the at least one single crystal silicon component comprises a deflecting mirror at which the light beam is directed and a torsional mirror to which the deflecting mirror deflects the light beam, and the at least one polysilicon component comprises a hinge retaining the deflecting mirror.

**REMARKS**

Claims 1-20 were issued on 14 December 1999. Claims 21-36 are new and pending.

The patent in question was allowed on first office action with minor changes made to the claims by Examiner's Amendment. The attorney handling the case at the time did not appreciate that the scope of the invention extended beyond the scope of the claims allowed and that issued in the case and so was satisfied with the issued claims. Following discussions between an inventor and the undersigned attorney, it became clear that Applicants were entitled to broader claims that would better capture the invention. The above new claims are directed to the true scope of the invention as understood by the inventors and the undersigned, and are, in Applicants' belief, allowable over the prior art of record at the time of prosecution of the originally filed patent application since no one had disclosed, taught, or suggested the formation of polysilicon MEMS elements with single crystal silicon MEMS elements formed from the active layer of a SOI wafer.

In view of the foregoing, Applicants believe the subject Reissue application is in condition for allowance and request such allowance at the Examiner's earliest convenience. If the Examiner considers personal contact advantageous to the disposition of this case, please call Applicants' Attorney, David E. Henn at (585) 423-4299, Xerox Corporation, Rochester, New York 14644, or fax him at (585) 423-5240.

Respectfully submitted,



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DEH/gmm

Application No. Not Yet Assigned

Attorney Docket No. D/98706R

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

Claims 21-36 are NEW claims.